

Claims

1. A silicon carbide-based catalytic body comprising:
a porous body of given shape comprising a first bonded structure formed by bonding a large number of silicon carbide particles as an aggregate to each other in a state that a large number of fine pores are present; and
a catalyst containing an alkali metal and/or an alkaline earth metal, loaded on the porous body,
wherein the catalyst is loaded via a crystalline coating film comprising an oxide and formed on at least part of the surfaces of the silicon carbide particles forming the first bonded structure.
2. A silicon carbide-based catalytic body comprising:
a porous body of given shape comprising a second bonded structure formed by bonding a large number of silicon carbide particles as an aggregate and metallic silicon as a binder in a state that a large number of fine pores are present; and
a catalyst containing an alkali metal and/or an alkaline earth metal, loaded on the porous body,
wherein the catalyst is loaded via a crystalline coating film comprising an oxide and formed on at least part of the surfaces of the silicon carbide particles and/or the metallic silicon, forming the second bonded structure.
3. A silicon carbide-based catalytic body according to Claim 1 or 2, wherein the crystalline coating film contains SiO_2 .
4. A silicon carbide-based catalytic body according to any of Claims 1 to 3, wherein the crystalline coating film comprises cristobalite and/or mullite.
5. A silicon carbide-based catalytic body according to any

of Claims 1 to 4, wherein the given shape of the porous body is a honeycomb shape.

6. A process for producing a silicon carbide-based catalytic body, the process comprising:

5 forming a raw material mixture containing silicon carbide particles and metallic silicon into a formed body of a given shape;

calcinating and firing the formed body;

10 heat treating the formed body in an oxygen-containing atmosphere; and then

loading, on the formed body, a catalyst containing an alkali metal and/or an alkaline earth metal,

to obtain a catalytic body comprising:

15 a porous body comprising a second bonded structure formed by bonding a large number of the silicon carbide particles and the metallic silicon in a state that a large number of fine pores are present; and

20 the catalyst loaded on the porous body via a crystalline coating film comprising an oxide and formed on at least part of the surfaces of the silicon carbide particles and/or the metallic silicon, forming the second bonded structure.

7. A process for producing a silicon carbide-based catalytic body according to Claim 6, wherein the heat
25 treatment is conducted at a temperature of 800 to 1,400°C.

8. A process for producing a silicon carbide-based catalytic body according to Claim 6 or 7, wherein the given shape is a honeycomb shape.